DEPARTMENT of ENVIRONMENTAL SERVICES
Water Supply & Pollution Control Division - Biology Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake:	SUNCOOK POND, LOWER	Lake Area (ha):	99.27
Town:	BARNSTEAD	Maximum depth (m):	4.9
County:	Belknap	Mean depth (m):	2.9
River Basin:	Merrimack	Volume (m^3):	2916500
Latitude:	43°22'21" N	Relative depth:	0.4
Longitude:	71°16'04" W	Shore configuration:	1.64
Elevation (ft):	551	Areal water load (m/yr):	65.36
Shore length (m):	5800	Flushing rate (yr^{-1}):	22.20
Watershed area (ha):	14193.1	P retention coeff.:	0.31
% watershed ponded:	4.1	Lake type:	natural w/dam

BIOLOGICAL:		11 January 1993	8 July 1992
DOM. PHYTOPLANKTON (% TOTAL)	#1	ASTERIONELLA 45%	SPHAEROCYSTIS 50%
	#2	MELOSIRA 20%	MELOSIRA 20%
	#3	DINOBRYON 15%	ASTERIONELLA 10%
PHYTOPLANKTON ABUNDANCE (cells/mL)			1825
CHLOROPHYLL-A (µg/L)			4.17
DOM. ZOOPLANKTON (% TOTAL)	#1	SYNCHAETA 73%	VORTICELLA 25%
	#2		KELLICOTTIA 23%
	#3		NAUPLIUS LARVA 19%
ROTIFERS/LITER		36	43
MICROCRUSTACEA/LITER		4	70
ZOOPLANKTON ABUNDANCE (#/L)		40	151
VASCULAR PLANT ABUNDANCE			Scattered
SECCHI DISK TRANSPARENCY (m)			3.5
BOTTOM DISSOLVED OXYGEN (mg/L)		11.7	6.8
BACTERIA (E. coli, #/100 ml)	#1		
	#2		
	#3		

SUMMER THERMAL STRATIFICATION:

not stratified

Depth of thermocline (m): None
Hypolimnion volume (m^3) : None
Anoxic volume (m^3) : None

CHEMICAL: **Lake: SUNCOOK POND, LOWER**
Town: BARNSTEAD

	11 January 1993		8 July 1992		
DEPTH (m)	1.5	3.5	2.0		4.0
pH (units)	6.4	6.2	6.8		6.6
A.N.C. (Alkalinity)	4.7	5.9	4.2		5.3
NITRATE NITROGEN	0.03	0.07	< 0.02		< 0.02
TOTAL KJELDAHL NITROGEN	0.23	0.24			
TOTAL PHOSPHORUS	0.010	0.015	0.011		0.013
CONDUCTIVITY (μmhos/cm)	44.5	45.9	42.8		
APPARENT COLOR (cpu)	48	50	18		22
MAGNESIUM			0.59		
CALCIUM			2.2		
SODIUM			3.9		
POTASSIUM			0.61		
CHLORIDE	6	6	6		6
SULFATE	5	5	4		4
TN : TP	26	21			
CALCITE SATURATION INDEX			3.5		

All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 1992

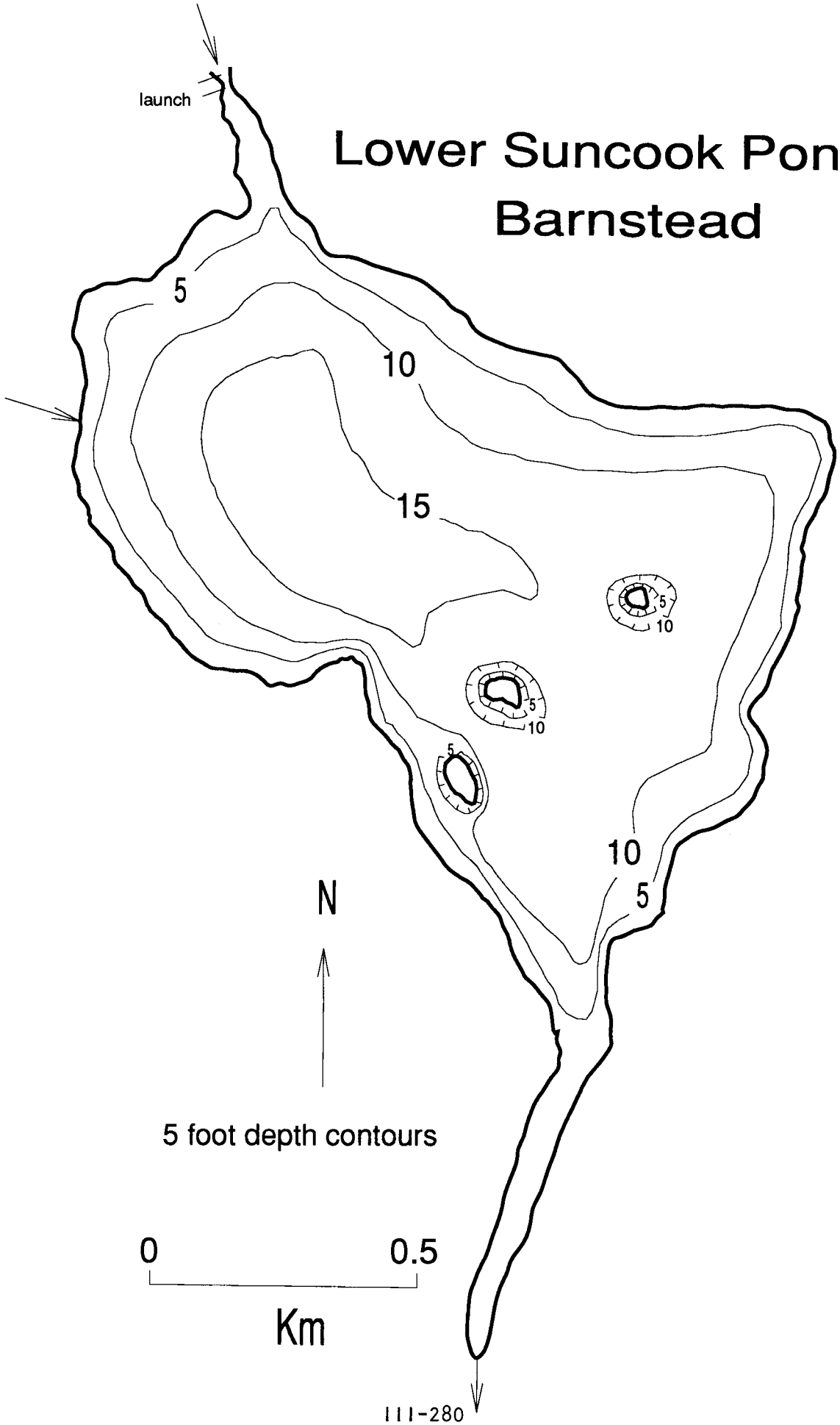
D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
**	2	1	1	4	Oligo.

COMMENTS:

1. Shoreline is very developed with cottages and many retaining walls.

2. This pond was previously surveyed and classified in 1979. It was mesotrophic in 1979. The change was because a thermal stratification and low bottom dissolved oxygen content was present in 1979, and the plant growth was more common in 1979.

3. Microcystis (55%) dominated the wholewater phytoplankton.


launch
Lower Suncook Pond
Barnstead
5
10
15
5
10
5
10
5
10
5
N
5 foot depth contours
0
0.5
Km
111-280

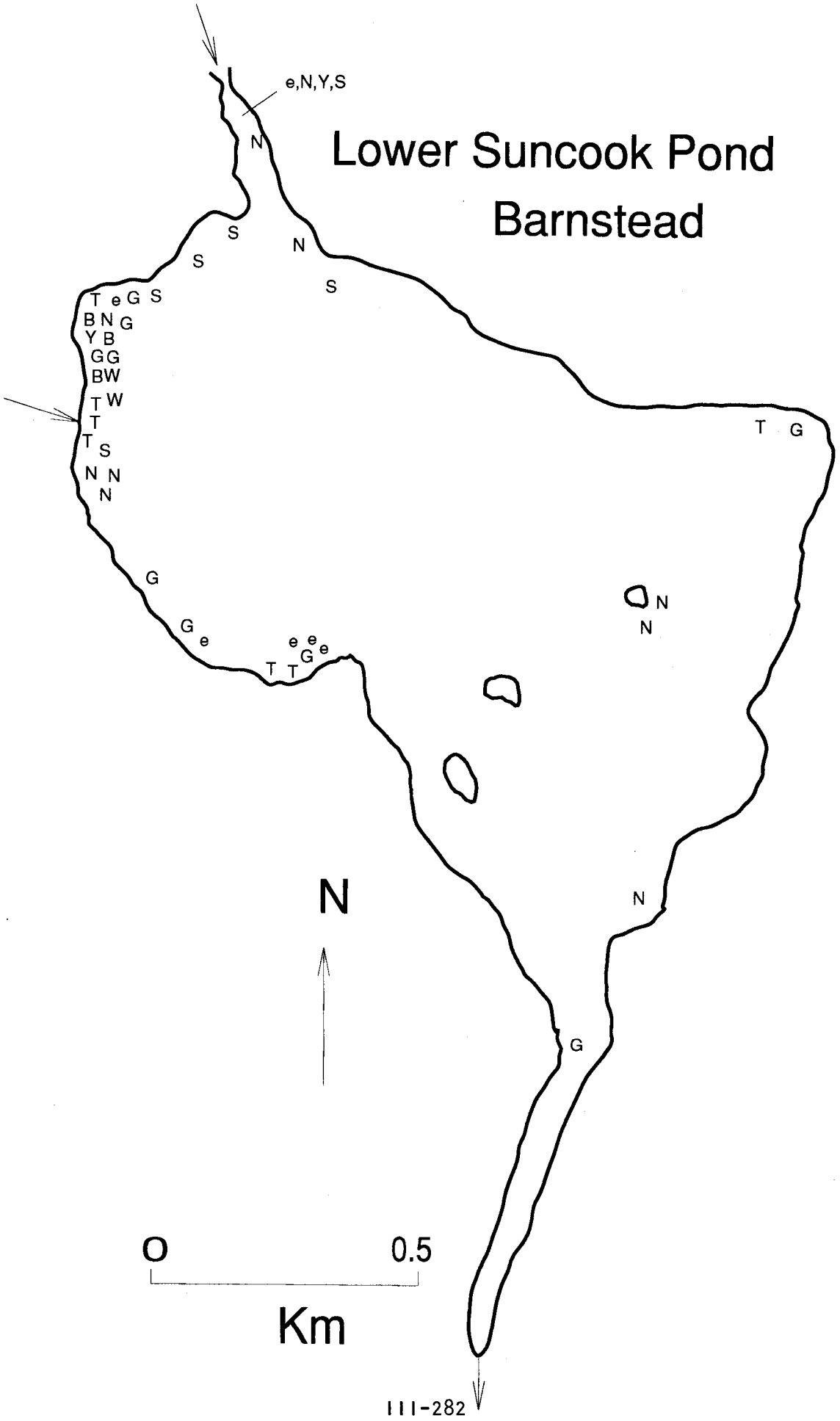
FIELD DATA SHEET

LAKE: SUNCOOK POND, LOWER TOWN: BARNSTEAD
DATE: 07/08/92 WEATHER: PARTLY CLOUDY

	DEPTH (M)	TEMP (°C)	*DISSOLVED OXYGEN	OXYGEN SATURATION
	0.1	22.0	8.5	96 %
	1.0	21.0	8.4	94 %
	2.0	21.0	8.4	94 %
	3.0	21.0	7.8	86 %
	4.0	20.0	7.8	84 %
	4.5	20.0	6.8	74 %

SECCHI DISK (m): 3.5 COMMENTS:
BOTTOM DEPTH (m): 4.9
TIME: 1200

*Dissolved oxygen values are in mg/L


Lower Suncook Pond
Barnstead
e,N,Y,S
N
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T e G S
B N G
Y B
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N
N
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N
0
0.5
Km
111-282

AQUATIC PLANT SURVEY

LAKE: SUNCOOK POND, LOWER TOWN: BARNSTEAD DATE: 07/08/92

Key	PLANT NAME		ABUNDANCE
	GENERIC	COMMON	
W	Potamogeton	Pondweed	Sparse
N	Nymphaea	White water lily	Sparse
Y	Nuphar	Yellow water lily	Sparse
S	Sparganium	Bur reed	Sparse
G	Gramineae	Grass family	Sparse
e	Eleocharis	Spike rush	Sparse
T	Typha	Cattail	Sparse
B	Brasenia schreberi	Water shield	Sparse

OVERALL ABUNDANCE: Scattered

GENERAL OBSERVATIONS:

1. Plant growth was common in the northwest area of the pond, but was sparse elsewhere.

2. White water lily was the most common of the plants listed.

3. Myriophyllum heterophyllum was not observed during this survey, but was later discovered in the narrow outlet channel in the summer of 1993.